



May 26, 2020

Dr. James D. Fielder, Jr.
Secretary of Maryland Higher Education
Maryland Higher Education Commission
6 N. Liberty Street
Baltimore, MD 21201

Dear Dr. Fielder,

Capitol Technology University is requesting approval to offer a **Bachelor of Science (B.S.) in Professional Trades Administration**. The degree curriculum will be taught using the existing faculty at our university and will be supported by the development of new courses. The mission of Capitol Technology University is to provide a practical education in engineering, computer science, information technology, and business that prepares individuals for professional careers and affords the opportunity to thrive in a dynamic world. A central focus of the university's mission is to advance practical working knowledge in areas of interest to students and prospective employers within the context of Capitol Tech's degree programs. The university believes that a **B.S. in Professional Trades Administration** is consistent with this mission.

To respond to the needs of the skilled professional trades, we respectfully submit for approval a Bachelor of Science (B.S.) in Professional Trades Administration. The required proposal is attached as well as the letter from me, as university president, confirming the adequacy of the university's library to serve the needs of the students in this degree.

Respectfully,

Bradford L. Sims, PhD
President

May 26, 2020

Dr. James D. Fielder, Jr.
Secretary of Maryland Higher Education
Maryland Higher Education Commission
6 N. Liberty Street
Baltimore, MD 21201

Dear Dr. Fielder,

This letter is in response to the need for confirmation of the adequacy of the library of Capitol Technology University to support the proposed **Bachelor of Science (B.S.) in Professional Trades Administration**. As president of the university, I confirm that the library resources, including support staff, are more than adequate to support the **B.S. in Professional Trades Administration**. In addition, the university is dedicated to, and has budgeted for, continuous improvement of its library resources.

Respectfully,



Bradford L. Sims, PhD
President



Cover Sheet for In-State Institutions

New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	Capitol Technology University
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Each action below requires a separate proposal and cover sheet.

- | | |
|---|---|
| <input checked="" type="radio"/> New Academic Program New | <input type="radio"/> Substantial Change to a Degree Program |
| <input type="radio"/> Area of Concentration New | <input type="radio"/> Substantial Change to an Area of Concentration |
| <input type="radio"/> Degree Level Approval New | <input type="radio"/> Substantial Change to a Certificate Program |
| <input type="radio"/> Stand-Alone Certificate | <input type="radio"/> Cooperative Degree Program |
| <input type="radio"/> Off Campus Program | <input type="radio"/> Offer Program at Regional Higher Education Center |

Department Proposing Program	Department of Professional Trades		
Degree Level and Degree Type	Bachelor of Science (B.S.)		
Title of Proposed Program	B.S. in Professional Trades Administration		
Total Number of Credits	121		
Suggested Codes	HEGIS: 516	CIP: 52	
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education (<i>fully online</i>) <input checked="" type="radio"/> Both		
Program Resources	<input checked="" type="radio"/> Using Existing Resources <input type="radio"/> Requiring New Resources		
Projected Implementation Date	<input checked="" type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer Year: 2020		
Provide Link to Most Recent Academic Catalog	URL: https://www.captechu.edu/current-students/academic-resources		

Preferred Contact for this Proposal	Name: Dr. Soren Ashmall		
	Title: Director, Assessment and Accreditation		
	Phone: (571) 332-4344		
	Email: spashmall@captechu.edu		

President/Chief Executive	Type Name: Dr. Bradford Sims		
	Signature: <i>Bradford Sims</i>	Date: 5-26-20	
Approval/Endorsement by Governing Board	Type Name: Dr. Bradford Sims		
	Signature: <i>Bradford Sims</i>	Date: 5-26-20	

Revised 5/15/18

PROPOSAL FOR:

☒ **NEW INSTRUCTIONAL PROGRAM**
☐ **SUBSTANTIAL EXPANSION/MAJOR MODIFICATION**
☐ **COOPERATIVE DEGREE PROGRAM**
☒ **WITHIN EXISTING RESOURCES** or ☐ **REQUIRING NEW RESOURCES**



CAPITOL
Technology University

Institution Submitting Proposal

Fall 2020

Projected Implementation Date

**Bachelor of Science
(B.S.)**

Award to be Offered

0516

Suggested H.E.G.I.S. Code

**Bachelor of Science in
Professional Trades Administration**
Title of Proposed Program

52.0205

Suggested C.I.P. Code

Professional Trades
Department of Proposed Program

Prof. Gary Burke
Name of Department Head

Dr. Soren Ashmall
Director, Assessment
and Accreditation

spashmall@captechu.edu
Contact E-Mail Address

571-332-4344
Contact Phone Number

Bradford Sund 5-26-20
Signature and Date

President/Chief Executive Approval

MAY 26, 2020
Date

Date Endorsed/Approved by Governing Board

Proposed Bachelor of Science in Professional Trades Administration
Department of Professional Trades
Capitol Technology University
Laurel, Maryland

A. Centrality to Institutional Mission and Planning Priorities:

- 1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.**

Bachelor of Science in Professional Trades Administration Program Description:

The **Bachelor of Science (B.S.) in Professional Trades Administration** will enable students to gain the administrative abilities needed to thrive as a leader in a skilled professional trade field. The program will introduce the analytics and decision-making required for a successful skilled professional trade administration. Students learn how skilled professional trades function effectively and obtain knowledge of the administrative activities to help grow successful enterprises. The program prepares students to deal with all the regulatory requirements unique to the skilled professional trades.

Relationship to Institutional Approved Mission:

The **B.S. in Professional Trades Administration** is consistent with the University's mission to educate individuals for professional opportunities in engineering, computer science, information technology, and business. The University provides relevant learning experiences that lead to success in the evolving global community. The **B.S. in Professional Trades Administration** supports that philosophy in a significant growth area. The **B.S. in Professional Trades Administration** degree also complements the University's existing degree programs.

The **B.S. in Professional Trades Administration** degree will be offered on-ground in a traditional classroom environment and online using the Canvas Learning Management System and Zoom. The result is the convenience required by the 21st Century learner and provides the interaction with faculty and fellow students that is critical to the high-level learning experience. The curriculum provides the student with the necessary learning tools that the University believes vital to be successful in the Professional Trades Administration field. The degree is also consistent with the interdisciplinary nature of the University.

- 2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.**

Capitol Technology University operates on four strategic goals:

- 1. Expand Educational Offerings, Increase Program Completion:** *Capitol Technology University is an institution that offers career-relevant curricula with quality learning outcomes. The strategy includes continuing to expand educational offerings, increasing program completion, and raising learner qualifications and outcomes.*

2. **Increase Enrollment and Institutional Awareness:** *Capitol will accelerate its goal pursuit to become more globally renowned and locally active through student, faculty and staff activities. Enrollment will grow to 650 undergraduates, 350 masters' students and 250 doctoral candidates.*
3. **Improve the Utilization of University Resources and Institutional Effectiveness While Expanding Revenue:** *Capitol will likely continue to be 80% financially dependent on student tuition and fees. We plan to enhance our resources by expanding the range and amount of funding from other streams and aligning costs with strategic initiatives.*
4. **Increase the Number and Scope of Partnerships:** *Capitol's service to our constituents and sources of financial viability both depend upon participation with continuing and new partner corporations, agencies, and schools.*

The proposed **B.S. in Professional Trades Administration** program supports all the University's four strategic goals. The proposed degree builds upon the existing areas of degrees at the undergraduate level: B.S. in Astronautical Engineering, B.S. in Aviation Professional Pilot, B.S. in Computer Engineering, B.S. in Computer Engineering Technology, B.S. in Computer Science, B.S. in Construction Information Technology and Cybersecurity, B.S. in Construction Management and Critical Infrastructure, B.S. in Construction Safety, B.S. in Counterterrorism, B.S. in Cyber Analytics, B.S. in Cybersecurity, B.S. in Data Science, B.S. in Electrical Engineering, B.S. in Electrical Engineering Technology, B.S. in Engineering Technology, B.S. in Facilities Management and Critical Infrastructure, B.S. in Information Technology, B.S. in Management of Cyber and Information Technology, B.S. in Mechatronics Engineering, B.S. in Mechatronics and Robotics Engineering Technology, B.S. in Software Engineering, and B.S. in Technology and Business Management, B.S. in Unmanned and Autonomous Systems, and B.S. in Web Development.

The proposed degree supports the existing areas of degrees of graduate study, including the Master of Business Administration (M.B.A.), Master of Science (M.S.) in Astronautical Engineering, M.S. in Aviation, M.S. in Aviation Cybersecurity, M.S. in Computer Science, M.S. in Construction Cybersecurity, M.S. in Construction Safety, M.S. in Critical Infrastructure, M.S. in Cyber Analytics, M.S. in Cybersecurity, M.S. in Information Systems Management, M.S. in Engineering Technology, M.S. in Internet Engineering, M.S. in Unmanned and Autonomous Systems Policy and Risk Management, Technical Master of Business Administration (T.M.B.A.) in Business Analytics and Data Science, and T.M.B.A. in Cybersecurity, Doctor of Science (D.Sc.) in Cybersecurity, Doctor of Philosophy (Ph.D.) in Artificial Intelligence, Ph.D. in Aviation, Ph.D. in Business Analytics and Data Sciences, Ph.D. in Construction Science, Ph.D. in Critical Infrastructure, Ph.D. in Emergency and Protective Services, Ph.D. in Human Factors, Ph.D. in Manufacturing, Ph.D. in Occupational Health and Safety, Ph.D. in Product Management, Ph.D. in Quantum Computing, Ph.D. in Technology, Ph.D. in Technology/M.S. Research Methods Combination Program, Ph.D. in Unmanned Systems Applications.

The University's programs have been preparing professionals for the rapid advances in information technology, intense global competition, and increasingly sophisticated technological environments for decades. The **B.S. in Professional Trades Administration** follows that tradition.

The proposed **B.S. in Professional Trades Administration** is fully supported by the University's Vision 2025 and Strategic Plan 2017-2025. Funding to support the **B.S. in Professional Trades Administration** is already available within the existing budget.

If approved, the new **B.S. in Professional Trades Administration** will use the Capitol Technology University's Information Literacy Path in the same manner as all of the other degrees at the institution. The University infuses Information Literacy into the curriculum and the undergraduate experience. Capitol Technology University's Information Literacy Path begins during Orientation and Freshman Seminar. The Information Literacy Path continues every semester through the university's Writing Across the Curriculum program where there are writing assignments in all courses -- some of which require significant research. During the Freshman year, students must take English Communications I (EN-101) and English Communications II (EN-102). Both courses have a series of writing assignments that begin during Week 1 and continue to Week 16 of the semester. In addition to examining literature, EN-102 requires a team project in global research. Every degree at the University also requires two other courses: Ethics (SS-351) and Arts and Ideas (HU-331). Both courses focus on research and experiential learning. All students also have access to informative videos on the University's portal that support Information Literacy through the University Library. All students at the University will experience all the markers in the Information Literacy Path regardless of learning modality (i.e., online, on-ground, and hybrid).

The University has active partnerships in the private and public areas (e.g., Parson Corporation, Leidos, Patton Electronics, Lockheed Martin, Northrup Grumman, Cyber Security Forum Initiative, Internal Revenue Service, and National Cryptologic School). The **B.S. in Professional Trades Administration** degree will provide new opportunities for partnerships. The increase in alliances and the placement of our graduates in our partner institutions will serve to expand the University's enrollment and reputation. While additional students will increase financial resources, new partnerships, and grants in the Professional Trades Administration field will help diversify and increase financial resources.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation. (Additional related information is required in section L.)

Capitol Technology University will support the proposed program through the same process and level of support as the University's existing programs. The University has also budgeted funds to support program and course development, online support, office materials, travel, professional development, and initial marketing. There is no substantial impact to the institution due to the advanced budgeting of these funds. If approved, the program will be self-sustaining going forward.

4. Provide a description of the institution's commitment to:

a. Ongoing administrative, financial, and technical support of the proposed program

The proposed degree is an integral part of the University's Strategic Plan for FY 2017-2025 and forward. The institutional and departmental budgets for FY 2020-2021, as well as the forecasted budgets going forward, include funding for the administrative, financial, and technical support of the new degree.

- b. **Continuation of the program for a period of time sufficient to allow enrolled students to complete the program.**

Capitol Technology University is fully committed to continuing the proposed **B.S. in Professional Trades Administration** degree program for a sufficient period to allow enrolled students to complete the program.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

- 1. **Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:**

- a. **The need for advancement and evolution of knowledge.**

Successful leaders skilled professional trades understand administration, financial fundamentals, project management, marketing, and the legal environment of their field. While a person with a skilled professional trade can complete a certificate, an apprenticeship, or an associate's degree to work in their trade, those who would like to increase their income and gain more responsibility will need to pursue a bachelor's degree.

In most fields, more education corresponds to higher salaries. The Trades and Careers are no different – for some of the highest paying jobs, employers prefer to hire candidates with bachelor's degree. A bachelor's degree can also be helpful for entering management positions in the trades. This would enable you to take on more responsibilities, as well as earn more money.

(Source: <https://www.collegechoice.net/trades-careers/>)

Fit Small Business, a small business resource and industry leader, also reports that skilled trades professionals who gain the right advanced competencies through more education are better prepared to lead a small business or advance in an existing trade organization.

- b. **Societal needs, including expanding educational opportunities and choices for minorities and educationally disadvantaged students at institutions of higher education.**

Capitol Technology University is a diverse multiethnic and multiracial institution with a long history of serving minority populations. The University has a 51% minority student population, with 7% undisclosed. The Black/African American population is 34%. The university has a military/veteran population of 22%. The University also has a 22% female population – a significant percentage given its status as a technology institution. If approved, the proposed **B.S. in Professional Trades Administration** will expand the field of opportunities for minorities and disadvantaged students.

- c. **The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs.**

While Capitol Technology University is not a historically black institution, the university is a diverse multiethnic and multiracial institution with a long history of serving minority populations. The University has a 51% minority student population, with 7% undisclosed. The Black/African American population is 34%. The University has a military/veteran

population of 22%. The university also has a 22% female population – a significant percentage given its status as a technology institution. If approved, the proposed **B.S. in Professional Trades Administration** will expand the field of opportunities for minorities and disadvantaged students. Given the substantial minority population of Capitol Technology University, it is also reasonable to assert that the **B.S. in Professional Trades Administration** program will add to the base of minority participation in the Professional Trades Administration field.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.

The 2017-2021 Maryland State Plan for Postsecondary Education articulates three goals for postsecondary education:

1. Access
2. Success
3. Innovation

Goal 1: Access

"Ensure equitable access to affordable and quality postsecondary education for all Maryland residents."

Capitol Technology University is committed to ensuring equitable access to affordable postsecondary education for all Maryland residents. The University meets its commitment in this arena through its diverse campus environment, admissions policies, and academic rigor.

The Capitol Technology University community is committed to creating and maintaining a mutually respectful environment that recognizes and celebrates diversity among all students, faculty, and staff. The University values human differences as an asset and works to sustain a culture that reflects the interests, contributions, and perspectives of members of diverse groups. The University delivers educational programming to meet the needs of diverse audiences. We also seek to instill those values, understanding, and skills to encourage leadership and service in a global multicultural society.

The composition of the University's student body reflects the institution's commitment to diversity. Capitol Technology University has a 51% minority student population, with 7% undisclosed. The Black/African American population is 34%. The University has a military/veteran population of 22%. The University also has a 22% female population – a significant percentage given its status as a technology university.

Achievement gaps: The University provides leveling courses in support of individuals attempting a career change to a field of study not necessarily consistent with their current skills. There are situations where undergraduate courses best serve student needs in subject areas. The University makes those courses available.

The University engages in diversity training for its institutional population, including students. Diversity and inclusiveness are built into the curriculum allowing graduates to operate effectively in a global environment. The University supports multiple diversity enhancing actions, including team projects and grants across degrees. This has proven effective at supporting numerous aspects

of diversity.

Capitol Technology University does not discriminate on the basis of race, color, national origin, sex, age, sexual orientation, or handicap in admission, employment, programs, or activities.

Through its academic programs, Capitol Technology University seeks to prepare all of its graduates to demonstrate four primary characteristics:

- **Employability:** The ability to enter and advance in technical and managerial careers, appropriate to their level and area of study, immediately upon graduation.
- **Communications:** Mastery of traditional and technological techniques of communicating ideas effectively and persuasively.
- **Preparation of the Mind:** The broad intellectual grounding in technical and general subjects required to embrace future technical and managerial opportunities with success.
- **Professionalism:** Commitment to life-long learning, ethical practice, and participation in professions and communities.

The proposed **B.S. in Professional Trades Administration** program and University financial aid will be available to all Maryland residents who qualify academically for admission. The University has successfully managed to support Financial Aid for its students since its founding in 1927.

The **B.S. in Professional Trades Administration** program, with its academic rigor, will produce skilled professional trades leaders with the skills and abilities to advance their careers. The University has a proven record of rigorous high-quality education in all of its degrees. The University is fully accredited by five accrediting organizations. The University receives its regional accreditation from the Middle States Commission on Higher Education (MSCHE). The University also has specialized accreditation from the International Accreditation Council of Business Education (IACBE), Accreditation Board for Engineering and Technology (ABET), National Security Agency (NSA), and Department of Homeland Security (DHS). The **B.S. in Professional Trades Administration** program is consistent with the MSCHE criteria for regional accreditation of the delivery of high-quality higher education.

Goal 2: Success

"Promote and implement practices and policies that will ensure student success."

The courses for the **B.S. in Professional Trades Administration** degree will be offered on-ground in a traditional classroom environment and online using the Canvas Learning Management System and Zoom. The University provides a tuition structure that is competitive with its competitors. The University tuition structure does not differentiate between in-state and out-of-state students. The University's Student Services provide advising, tutoring, virtual job fair attendance, and other activities supporting student completion and employment for both on-ground and online students.

Students receive information throughout the admissions process regarding the cost to attend the University. The information is also publicly available on the University website. The University's Admissions Office and Office of Financial Aid identify potential grants and scholarships for each student. The Office of Financial Aid also provides plans for each student to reduce potential student debt. The net cost versus gross costs is identified clearly for the student. Students receive

advising from Financial Aid Advisors before enrolling in classes for the first time. Admissions personnel, Student Services Counselors, and Departmental Chairs advise students of the need for academic readiness as well as the degree requirements. Academic Advisors also develop a specific success pathway for each student.

The University's tuition increases have not exceeded 3%. The University also has a tuition guarantee for undergraduates, which means full-time tuition is guaranteed not to increase more than 1% per year above the rate at the time of initial enrollment. The tuition remains at this rate if the student remains enrolled full-time without a break in attendance.

The University provides services and learning tools to guide students to successful degree completion. Programs such as Early Alert give the University's faculty and staff opportunities for early student intervention on the pathway to graduation. This program applies to all students regardless of the mode of course delivery or degree program. Capitol Technology University is also a transfer-friendly institution and participates in multiple programs for government and military credit transfer. Capitol Technology University participates in the Articulation System for Maryland Colleges and Universities (ARTSYS) and has numerous transfer agreements with local institutions at all degree levels.

The University has in place services, tutoring, and other tools to help ensure student graduation and successful job placement. The University hosts a career (job) fair twice a year. The University has an online career center available to all students covering such topics as career exploration, resume writing, job search techniques, social media management, mock interviews, and assistance interpreting job descriptions, offers, and employment packages.

The University also works with its advisory boards, alumni, partners, and faculty to help ensure the degrees offered at the University are compatible with long-term career opportunities in support of the state's knowledge-based economy.

Goal 3: Innovation

"Foster innovation in all aspects of Maryland higher education to improve access and student success."

Capitol Technology University's past, present, and future are inextricably intertwined with innovation. The University has a long tradition of serving as a platform for the use of new and transformative approaches to delivering higher education. New technology and cutting-edge techniques are blended with proven strategies to enable student success in all classroom modalities as well as in a successful career after graduation. As a small institution, Capitol Technology University has the agility to rapidly integrate new technologies into the curriculum to better prepare students for the work environment. The University designs curriculum in alliance with its accreditation and regulating organizations and agencies.

The University also employs online virtual simulations in a game-like environment to teach the application of knowledge in a practical hands-on manner. The University engages with a partner creating high-level virtual reality environments for use by students pursuing this degree. This use of current technology occurs in parallel with traditional, proven learning strategies. These elements of the University's online learning environment are purposeful and intended to improve the learning environment for both the student and faculty member. The approach is intentionally

designed to increase engagement, improve outcomes, and improve retention and graduation rates. The University believes that innovation is the key to successful student and faculty engagement.

Example: The University engages its students in fusion projects that allow students to contribute their skills in interdisciplinary projects such as those in our Astronautical Engineering and Cyber Labs. In those labs, students become designers, builders, and project managers (e.g., to send a CubeSat on a NASA rocket) and data analysts (e.g., to analyze rainforest data for NASA). The University's students recently launched their latest satellite aboard a NASA rocket from a location in Norway at the beginning of the 2019 Fall Semester. We are also recruiting additional partners for the proposed **B.S. in Professional Trades Administration** for which real-world projects will provide students integrative learning opportunities in the Professional Trades Administration field.

The University also supports prior learning assessment. Portfolio analysis is available. The University accepts professional certifications for credit for specific courses. The University also allows students to take a competency exam for credit for required courses up to the current state limits.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State:

1. Describe potential industry or industries, employment opportunities, and expected level of entry (ex: *mid-level management*) for graduates of the proposed program.

Graduates with the **B.S. in Professional Trades Administration** will be expected to fill entry-level positions in government organizations and commercial companies with titles such as:

Rotary Drill Manager, Oil and Gas Industry
Boilermaker Manager
Manager, Aircraft Mechanics
Manager, Avionics Technicians
Avionics Technician Manager
Owner, Pile-Driver Company
Plumber, Pipefitter, or Steamfitter Manager
Owner, Electrical Company
Crane Manager
Wind Turbine Manager
Millwright Manager
Owner, Brick Masonry Company
Manager, Commercial Divers
Industrial Machinery Manager
CNC Machine Tool Manager
Mobile Heavy Equipment Manager
HVAC Manager
Carpentry Manager
Manager, Diesel Mechanics
Owner, Auto Body Repair Company
Welding Manager

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.

Multiple industry reports in 2019 indicate the highest number of opportunities now exist in the skilled professional trades. The need for leaders in those fields is also acute and will continue to grow as greater numbers of the Baby Boomer generation retires.

The need for skilled tradespeople is expected to become even more acute as more baby boomers hit retirement age and exit the labor force. Trades are disproportionately affected by this phenomena because trades people are on average older than many other segments of the workforce. Enrollment in trades has declined over the past several decades as many young people incorrectly perceive the trades to be poorly paid. They see them as not intellectually stimulating and "beneath them." More than 60 percent of skilled trades workers are 45 or older in some North American locations.

High demand is one reason the skilled trades are ideally suited for those wishing to become self-employed and start their own businesses. Another is that most trades can be operated as home-based businesses because the work is typically performed at the customer job site. A third reason is that startup capital costs for things like vehicles and tools are relatively low for most trades, at least compared to many other types of businesses. Skilled trades cannot be automated to any degree, ensuring future job security. Even in the welding trade, which is automated to a certain extent in manufacturing, there are many types of jobs that cannot be feasibly automated.

(Source: <https://www.thebalancesmb.com/best-skilled-trade-businesses-to-start-4107037>)

As a result, the projected market demand and outlook is very bright for those persons who pursue a career in a skilled trade as well as leadership positions in those trades.

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

The success of the skilled trade professional relies on the knowledge and application of current administrative skills and related technology. The principles of sound accounting enable owners of skilled professional trade companies and organizations to track cash flow and inventory as well as produce the income statements and balance sheet that can help them build their strategies for success. The same dynamic is true of all managerial functions in the skilled professional trades. On the positive side, leaders in the skilled trade professions with the right education and training in current technology can harness all of the necessary capabilities for small and large organizations. However, most persons in those professions only know their trade and possess a limited amount of administrative skills. Most do not have the full breadth of education and training to maximize their income during a lifelong career and increase their revenue while keeping costs in check. The **B.S. in Professional Trades Administration** will provide students those competencies needed for success.

The outlook for the skilled trades is bright. According to Fit Small Business, a leading digital resource for small business owners, one of the best opportunities is in a skilled trade business.

Examples of skilled tradesman jobs you can turn into businesses are electrician, machinist, pipe layer, welder, and HVAC technician (heating and cooling tech). A number of sources are predicting that 31 million skilled trade jobs will be vacant in 2020. A very large challenge of filling these jobs is finding skilled workers. There is a huge opportunity to start a business that not only serves customers well, but also trains future skilled trade workers.

(Source: <https://fitsmallbusiness.com/best-businesses-to-start/>)

While the United States (U.S.) Bureau of Labor Statistics, does not have a distinct category for administrative managers in the skilled professional trades, the bureau does track one category that overlaps with it. The outlook for administrative services managers encompasses a portion of organizational leaders in the skilled professional trades. It is not surprising then that the outlook for Administrative Services Managers is bright, too. Table 1 below pertains.

Table 1

Quick Facts: Administrative Services Managers	
2019 Median Pay ?	\$96,940 per year \$46.61 per hour
Typical Entry-Level Education ?	Bachelor's degree
Work Experience in a Related Occupation ?	Less than 5 years
On-the-job Training ?	None
Number of Jobs, 2018 ?	300,200
Job Outlook, 2018-28 ?	7% (Faster than average)
Employment Change, 2018-28 ?	21,800

4. Data showing the current and projected supply of prospective graduates.

As discussed in Section C.2, the need for skilled tradespersons and leaders in those fields is acute and will continue to grow as greater numbers of the Baby Boomer generation retires. Figure 1 (below) from Addeco, an industry leader in staffing, shows the seven skilled trades with the oldest workers – many from the Baby Boomer generation. The chart shows that all seven skilled trades have almost 45% of its workers who are over the age of 45 years old. Six of the seven skilled trades have workers that are over the age of 55 years old.

Figure 1



Industry Hygiene and Safety News, and online industry watchdog and news organization, also reports that “[i]n short, there aren’t enough young people entering the trades to replace the aging Baby Boomers leaving the workforce. For every one person that enters the trades, five retire.” All of these statistics show not only a shortage of new skilled tradespersons but also those who will lead and manage them.

The findings are also supported by the Manhattan Institute – an leading organization with expertise on domestic policy issues and the economy. The Manhattan Institute has been sounding the alarm about the skilled professional trades for the past four years.

America's industrial economy and the associated demand for workers in the skilled trades continues to grow.

- U.S. manufacturing output is 30% greater now than it was 15 years ago; output has returned to the peak level seen just before the Great Recession.
- Growth is forecast in 22 out of 23 manufacturing sectors as well as in infrastructures for transportation, energy, and housing, where skilled trades are essential.
- Six of the 10 fastest-growing industries require skilled trades—all these industries make products for which the global demand is rapidly growing.

A skills gap has created an unprecedented number of unfilled high-paying jobs in a sector otherwise experiencing job losses. The gap is expected to expand.

- An estimated half-million more jobs are available than people trained to fill them, with 88% of manufacturers reporting trouble finding skilled workers.
- Skilled trades vacancies have been the hardest to fill for six consecutive years. Some 60% of unfilled manufacturing jobs are due to a shortage of applicants with requisite skills.
- A disproportionate share of skilled trade workers are approaching retirement: the percentage of workers over age 45 in skilled trades is about 25% higher than the labor-force average.

(Source: <https://www.manhattan-institute.org/>)

Forbes Magazine has also reported similar findings recently across all skilled trades. As an example, the magazine quoted Joelle Salerno, the Government Affairs Director for National Electrical Contractors Association of Western PA, as saying the nationwide market demand for skilled electricians will remain high. He said there are 16,000 job openings for electricians with more anticipated as many current electricians are near retirement age.

D. Reasonableness of Program Duplication

- 1. Identify similar programs in the State and/or the same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.**

There are currently no bachelor's degrees in Professional Trades Administration in the State of Maryland. In Maryland, there are ninety degrees in business and management at twenty-three four-year institutions of higher education encompassing business in a broad spectrum, a subfield of business (e.g., economics, entrepreneurship, finance, etc.), specific business sectors (e.g., hospitality, non-profits, sports, tourism, etc.), or business management skills (e.g., accounting, marketing, etc.). Some of the degrees also have concentrations, specializations, or tracks. Tables 2-4 show those ninety degrees below along the various concentrations, specializations, and tracks offered. However, none of the existing degrees focus on the skilled professional trades administration as a unique subset. Other existing degrees provide either a broad approach or specific narrow approach that does not address skilled professional trades administration as a unique sub-group. **If approved, Capitol Technology University's B.S. in Professional Trades Administration will provide its graduates with a tailored education to be successful in Maryland and the surrounding region in the skilled professional trades.**

Table 2

Bowie State University	Morgan State University
B.S. in Accounting	B.S. in Accounting
B.S. in Banking & Finance	B.S. in Business Administration
B.S. in Business Administration	B.S. in Construction Management
B.S. in Business Information Systems	B.S. in Entrepreneurship
B.S. in Economics	B.S. in Hotel, Restaurant, and Hospitality Management

B.S. in Entrepreneurship and Small Business Management	B.S. in Management (Human Resource Management)
B.S. in General Business	B.S. in Marketing
B.S. in Marketing	B.S. in Services and Supply Chain Management
Coppin State University	University of Maryland Eastern Shore
B.S. in Management	B.S. in Agribusiness Management
B.S. in Management Information Systems	B.S. in Business Administration
B.S. in Marketing	B.S. in Construction Management Technology
B.S. in Non-Profit Leadership	B.S. in Finance
B.S. in Sport Management	B.S. in Hospitality and Tourism Management
	B.S. in Marketing
	B.S. in Professional Golf Management

Table 3

Frostburg State University	University of Maryland Global Campus
B.S. in Business Administration	B.S. in Accounting
Concentrations:	B.S. in Business Administration
Finance	B.S. in Cybersecurity Management and Policy
General Management	B.S. in Finance
Global Business	B.S. in Human Resource Management
Human Resource Management	B.S. in Legal Studies
Marketing	B.S. in Management Studies
Small Business/Entrepreneurship	B.S. in Marketing
B.S. in Adventure Sports Management	
	Saint Mary's College of Maryland
University of Baltimore	B.A. in Economics
B.S. in Business Administration	
Specializations:	Salisbury University
Accounting	B.S. in Accounting
Data Analytics	B.S. in Business Economics
Early Entry Law / Pre-Law, Business	B.S. in Business Management
Entrepreneurship	B.S. in Economics
Entrepreneurship Fellows Program	B.S. in Finance
Finance	Tracks:
General Business	Financial Planning
(Also Online Business Program Completer Option)	Investments
Human Resource Management	Corporate Finance
International Business	B.S. in International Business
Management	B.S. in Marketing
Marketing	
Real Estate and Economic Development	Towson University
Risk Management and Insurance	B.S. in Accounting

	B.S. in Business Administration
University of Maryland Baltimore County	Concentrations:
B.A. in Business Technology Administration	Entrepreneurship
	Finance
University of Maryland College Park	Human Resource Management
B.S. in Accounting	International Business
B.S. in Finance	Leadership and Management
B.S. in Information Systems	Legal Studies
B.S. in International Business	Marketing
B.S. in Management	Project Management and Business Analysis
B.S. in Marketing	Tracks:
B.S. in Operations Management & Business Analytics	Economics
B.S. in Supply Chain Management	Financial Planning
	Investments

Table 4

Capitol Technology University	Mount St. Mary's University
B.S. in Technology and Business Management	B.S. in Accounting
B.S. in Management of Cyber and Information Technology	B.S. in Business
B.S. in Facilities Management and Critical Infrastructure	B.S. in Economics
	B.S. in Entrepreneurship
Goucher College	B.S. in Sports Management
B.S. in Business Management	
Concentrations:	Notre Dame of Maryland University
Arts Management	B.A. in Business
International Business	B.A. in International Business
	B.A. in Marketing Communications
Johns Hopkins University	B.A. in Leadership in Hospitality and Event Management
B.S. in Entrepreneurship and Management	
Concentrations:	Stevenson University
Accounting & Finance	B.S. in Accounting
Business Law	B.S. in Business Administration
Marketing	B.S. in Business Communication
Leadership and Organizational Behavior	B.S. in Fashion Merchandising
Professional Communication	B.S. in Marketing
Loyola University Maryland	Washington Adventist University
B.B.A. in Accounting	B.S. in Accounting
B.B.A. in Business Administration	B.S. in Business Administration
Concentrations:	Concentrations:

Business Economics	Entrepreneurship
Finance	Finance
Information Systems	International Business
International Business	Management
Management	Marketing
Marketing	
	Washington College
Hood College	B.A. in Business Management
B.A. in Accounting	
B.A. in Business Administration	
B.A. in Economics	
McDaniels College	
B.S. in Accounting	
B.S. in Business Administration	
B.S. in Marketing	

2. Provide justification for the proposed program.

The proposed **B.S. in Professional Trades Administration** program is strongly aligned with the University's strategic priorities and is supported by adequate resources. The proposed **B.S. in Professional Trades Administration** degree will strengthen and expand upon existing technology, management, and applied engineering degree programs at the University. In addition, the **B.S. in Professional Trades Administration** program will be an option for all students as the field integrates well with the market needs of the University's other programs. There is a thorough discussion of the need for the program in Sections B and C of this document.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs):

1. Discuss the program's potential impact on the implementation or maintenance of high-demand programs at HBIs.

The university does not anticipate any impact on the implementation or maintenance of high-demand programs at HBIs. Bowie State University (BSU) offers eight bachelor degrees in business and management areas (i.e., accounting, banking and finance, business administration, business information systems, economics, entrepreneurship and small business management, general business, and marketing). But BSU but does not offer a B.A. or B.S. degree in professional trades administration. Coppin State University (CSU) offers five bachelor degrees in business and management areas (i.e., management, management information systems, marketing, non-profit leadership, and sport management). However, CSU does not offer a B.A. or B.S. degree in professional trades administration. Morgan State University (MSU) offers six bachelor degrees in business and management areas (i.e., accounting, business administration, entrepreneurship, management, marketing, services and supply chain management) as well as two bachelor degrees in industry-specific management (i.e., hotel/restaurant/hospitality management and construction management). But MSU does not offer a B.A. or B.S. degree in professional trades administration. The University of Maryland Eastern Shore (UMES) offers three bachelor degrees in business and management (i.e., business administration, finance, and marketing) as well as four bachelor degrees in industry-specific management (i.e., agribusiness management,

construction management technology, hospitality and tourism management, and professional golf management). But UMES does not offer a B.A. or B.S. degree in professional trades administration. Table 5 shows the HBI offerings in the state. **Capitol Technology University's proposed degree is different than degrees currently offered; Capitol Technology University's B.S. in Professional Trades Administration is focused on skilled professional trades administration as a unique sub-group.**

Table 5

Bowie State University	Morgan State University
B.S. in Accounting	B.S. in Accounting
B.S. in Banking & Finance	B.S. in Business Administration
B.S. in Business Administration	B.S. in Construction Management
B.S. in Business Information Systems	B.S. in Entrepreneurship
B.S. in Economics	B.S. in Hotel, Restaurant, and Hospitality Management
B.S. in Entrepreneurship and Small Business Management	B.S. in Management (Human Resource Management)
B.S. in General Business	B.S. in Marketing
B.S. in Marketing	B.S. in Services and Supply Chain Management
Coppin State University	University of Maryland Eastern Shore
B.S. in Management	B.S. in Agribusiness Management
B.S. in Management Information Systems	B.S. in Business Administration
B.S. in Marketing	B.S. in Construction Management Technology
B.S. in Non-Profit Leadership	B.S. in Finance
B.S. in Sport Management	B.S. in Hospitality and Tourism Management
	B.S. in Marketing
	B.S. in Professional Golf Management

F. Relevance to the identity of Historically Black Institutions (HBIs):

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

The University does not anticipate any impact on the uniqueness and institutional identities and missions of HBIs. Bowie State University (BSU) offers eight bachelor degrees in business and management areas (i.e., accounting, banking and finance, business administration, business information systems, economics, entrepreneurship and small business management, general business, and marketing). But BSU but does not offer a B.A. or B.S. degree in professional trades administration. Coppin State University (CSU) offers five bachelor degrees in business and management areas (i.e., management, management information systems, marketing, non-profit leadership, and sport management). However, CSU does not offer a B.A. or B.S. degree in professional trades administration. Morgan State University (MSU) offers six bachelor degrees in business and management areas (i.e., accounting, business administration, entrepreneurship, management, marketing, services and supply chain management) as well as two bachelor degrees in industry-specific management (i.e., hotel/restaurant/hospitality management and construction

management). But MSU does not offer a B.A. or B.S. degree in professional trades administration. The University of Maryland Eastern Shore (UMES) offers three bachelor degrees in business and management (i.e., business administration, finance, and marketing) as well as four bachelor degrees in industry-specific management (i.e., agribusiness management, construction management technology, hospitality and tourism management, and professional golf management). But UMES does not offer a B.A. or B.S. degree in professional trades administration. Table 5 in Section E.1 shows the HBI offerings in the state. **Capitol Technology University's proposed degree is different than degrees currently offered; Capitol Technology University's B.S. in Professional Trades Administration is focused on skilled professional trades administration as a unique sub-group.**

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10):

- 1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.**

The University's New Programs Group established the proposed program through a rigorous review of unmet needs. The group includes selected representation from the University's faculty, administrators, and Executive Council. The program will be overseen by a diverse faculty with backgrounds in the skilled professional trades, technology (for technical electives), and general education. Please see Section I for a detailed list of the faculty's backgrounds and qualifications.

- 2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.**

Educational Objectives:

1. Students will demonstrate knowledge in skilled professional trades administration.
2. Students will distinguish the unique features of skilled professional trades administration from the broader business and management fields.
3. Students will determine the best techniques to be applied to skilled professional trades administration.
4. Students will evaluate resourcing decisions for skilled professional trades administration.
5. Students will create a comprehensive administrative plan for skilled professional trades.
6. Students will integrate the latest technology into skilled professional trades administrative decisions.

Learning Outcomes:

Upon graduation:

1. Graduates will evaluate the legal, social, economic, environmental, and ethical impact of professional trades administration decisions.
2. Graduates will select resourcing for skilled professional trades.
3. Graduates will utilize the latest technology tools in successful professional trades administration.
4. Graduates will support the needs of customers within skilled professional trades at a high-quality level.

5. Graduates will work within skilled professional trades administrative constraints to ensure profitability.

3. Explain how the institution will:

a) Provide for assessment of student achievement of learning outcomes in the program

Capitol Technology University will assess student achievement of the learning outcomes per the regulations specified by the University's regional accreditation organization: the Middle States Commission on Higher Education (MSCHE).

Under MSCHE, the University will use Standard V, Educational Effectiveness Assessment, of the Standards for Accreditation and Requirements of Affiliation. Standard V requires:

Assessment of student learning and achievement demonstrates that the institution's students have accomplished educational goals with their program of study, degree level, the institution's mission, and appropriate expectations for institutions of higher education.

(Source: <https://www.msche.org/standards/>, retrieved 7/22/2019)

Per the MSCHE's accreditation requirements, Capitol Technology University will measure Standard V by using the following criteria:

An accredited institution possesses and demonstrates the following attributes or activities:

1. clearly stated educational goals at the institution and degree/program levels, which are interrelated with one another, with relevant educational experiences, and with the institution's mission;
2. organized and systematic assessments, conducted by faculty and/or appropriate professionals, evaluating the extent of student achievement of institutional and degree/program goals. Institutions should:
 - a. define meaningful curricular goals with defensible standards for evaluating whether students are achieving those goals;
 - b. articulate how they prepare students in a manner consistent with their mission for successful careers, meaningful lives, and, where appropriate, further education. They should collect and provide data on the extent to which they are meeting these goals;
 - c. support and sustain assessment of student achievement and communicate the results of this assessment to stakeholders;
3. consideration and use of assessment results for the improvement of educational effectiveness. Consistent with the institution's mission, such uses include some combination of the following:
 - a. assisting students in improving their learning;
 - b. improving pedagogy and curriculum;

- c. reviewing and revising academic programs and support services;
- d. planning, conducting, and supporting a range of professional development activities;
- e. planning and budgeting for the provision of academic programs and services;
- f. informing appropriate constituents about the institution and its programs;
- g. improving key indicators of student success, such as retention, graduation, transfer, and placement rates;
- h. implementing other processes and procedures designed to improve educational programs and services;

4. if applicable, adequate and appropriate institutional review and approval of assessment services designed, delivered, or assessed by third-party providers; and

5. periodic assessment of the effectiveness of assessment processes utilized by the institution for the improvement of educational effectiveness.

(Source: <http://www.msche.org/wp-content/uploads/2018/06/RevisedStandardsFINAL.pdf>)

4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements.

Program description, as it will appear in the catalog:

The **Bachelor of Science (B.S.) in Professional Trades Administration** will enable students to gain the administrative abilities needed to thrive as a leader in a skilled professional trade field. The program will introduce the analytics and decision-making required for a successful skilled professional trade administration. Students learn how skilled professional trades function effectively and obtain knowledge of the administrative activities to help grow successful enterprises. The program prepares students to deal with all the regulatory requirements unique to the skilled professional trades.

Description of program requirements:

Entrance Requirements

To be accepted into the program, students must be admitted to the University.

Degree Requirements:

The following is a list of courses for the **B.S. in Professional Trades Administration** degree. Students expecting to complete this degree must meet all prerequisites for the courses listed below.

**Bachelor of Science (B.S.) in Professional Trades Administration
Courses**

Total Credits: 121

PROFESSIONAL TRADES ADMIN CORE COURSES: 12 CREDITS

PTA-174 Intro to Professional Trades Administration (3 Credits)

This course presents a survey of the professional skilled trades environment. Topics include an introduction to the various forms of business, organizational structure, and their legal implications. Students will examine modern administration and supervision concepts, history, development of theory and practice, roles of managers, and the relationship between manager and employee. This is a seminar course with emphasis on class discussion and collaborative learning. Prerequisite: None.

PTA-200 Professional Trades Administration Communications (3 Credits)

This course includes preparation for various kinds of both written and oral professional trades administration communication. The course will develop and sharpen critical thinking, writing skills, report/proposal preparation and presentation, and other communication skills needed in the workplace. Students will explore strategies for effective communication. Prerequisite: EN-101.

PTA-289 Professional Trades Administration (3 Credits)

This course focuses on the principles and processes of professional trades administration. Students learn the advanced characteristics of skilled professional trades companies and organizations; related technology innovations; feasibility analyses; administrative plans; and the finance, organization, and operation of a professional trades company or organization. Prerequisite: EN-101.

PTA-454 International Professional Trades Administration (3 Credits)

Drawing upon previous professional trades administration courses, this course studies the nature and scope of international trade and investment, international institutions, the international monetary system and exchange markets, and the cultural factors affecting skilled professional trades operations. Students examine the effects of the rapid pace of new technologies on global professional skilled trades. Case study analysis and a variety of current media are used in this course. Prerequisites: EN-102, BUS-174, and PTA-372.

PROFESSIONAL TRADES MARKETING AND LEGAL CORE COURSES: 6 CREDITS**PTA-376 Marketing Principles for Professional Trades (3 Credits)**

The course focuses on the role of marketing and the strategies used by skilled professional trades managers to solve problems. Emphasis is placed on the relationship between consumers, professional trades companies and organizations, and government regulations regarding products, promotion, pricing, and distribution strategies. Industry standards, regulatory requirements, and ethical practices are the focal points of the course. Prerequisite: PTA-174.

PTA-378 Professional Trades Legal Environment (3 Credits)

This course introduces the student to legal reasoning; ethical norms; the legal process and the American legal system; administrative law process and the role of skilled professional trade manager in that process; the study of selected areas of public and private law, such as regulations, antitrust, labor, product liability, contracts, and consumer and environmental law; and international dimensions of the legal environment of law. The purpose of the course is to establish legal literacy and to develop an understanding of legal dynamics with a particular focus on the skilled professional trades. Prerequisites: EN-102 and PTA-174.

PROFESSIONAL TRADES LEADERSHIP CORE COURSES: 12 CREDITS**PTA-275 Human Resources in Professional Trades (3 Credits)**

This course examines the administrative aspects of human resources in skilled professional trades. Students learn key functions such as recruitment, selection, development, appraisal, retention, compensation, and labor relations in the context of the private and public sectors.

PTA-279 Introduction to Professional Trades Leadership (3 Credits)

This course focuses on the competencies for effective leadership in a skilled professional trade. In particular, the student examines the application of leadership skills, theories, and concepts in a multicultural society. This seminar course emphasizes class discussion and collaborative learning. Prerequisite: PTA-174.

PTA-301 Professional Trades Project Management (3 Credits)

This course is an introduction to project management in skilled professional trades. It covers the origins, philosophy, and involves actual applications and use of technology tools. The System Development Cycle is used as a framework to discuss project management. The course covers illustrative cases, project leadership, and team building as integral aspects of effective project management in a skilled professional trade organization. Prerequisite: PTA-174.

PTA-372 Professional Trades Financial Management (3 Credits)

This course familiarizes the student with the principles that guide the financial resources in the skilled professional trades. The primary philosophy is wealth maximization and the related decision criteria. Topics such as capital management, fixed-asset investment, cost of capital, capital structure, long-term finance, mergers, leasing, and multinational finance are covered. The course also presents accounting terminology and financial analysis concepts. Prerequisites: PTA-270 and MA-112.

PROFESSIONAL TRADES ACCOUNTING AND ECONOMICS CORE COURSES: 9 CREDITS

PTA-270 Professional Trades Financial Accounting I (3 Credits)

This course introduces accounting for the skilled professional trades manager. Students gain a strong knowledge of accounting terms, concepts, and procedures. Students analyze business transactions as each one relates to an organization's General Ledger. Students also learn about specialized journals as well as the various processes and procedures related to the full accounting cycle. The course's accounting principles conform to the Financial Accounting Standards Board. Prerequisite: None.

PTA-271 Professional Trades Financial Accounting II (3 Credits)

This course continues the focus on accounting principles, theories, and applications for the skilled professional trades manager. Students build additional skills in ledger entry and organization, payroll accounting, and financial statements. Students also explore accounting for partnerships and corporations, promissory notes, and the valuation of assets. Prerequisite: PTA-270.

PTA-282 Foundations of Economics for Professional Trades (3 Credits)

This course introduces economic concepts and analysis for skilled professional trades. Students deal with the relationship between government, business, and the overall economy. Students focus on the influence of the gross domestic product, public sector, unemployment, and aggregate supply and demand on the skilled professional trades. Students also learn about the global economy, international trade and protectionism. Prerequisite: EN-101.

TECHNICAL ELECTIVE COURSES: 42 CREDITS

Technical Elective #1 (3 Credits)

Technical Elective #2 (3 Credits)
Technical Elective #3 (3 Credits)
Technical Elective #4 (3 Credits)
Technical Elective #5 (3 Credits)
Technical Elective #6 (3 Credits)
Technical Elective #7 (3 Credits)
Technical Elective #8 (3 Credits)
Technical Elective #9 (3 Credits)
Technical Elective #10 (3 Credits)
Technical Elective #11 (3 Credits)
Technical Elective #12 (3 Credits)
Technical Elective #13 (3 Credits)
Technical Elective #14 (3 Credits)

GENERAL EDUCATION COURSES: 40 CREDITS

PHYSICAL SCIENCE COURSES: 6 CREDITS

CH-120 Chemistry (3 Credits)

Metric system and significant figures; stoichiometry; fundamental concepts of atomic structure and its relationship to the periodic table; electron configuration; bonds and electronegativity; gases; oxidation states and redox; solutions, acids and bases, changes of state, thermodynamics, chemical kinetics, and equilibrium. Prerequisites: MA-114

PH-201 General Physics I (3 Credits)

Non-calculus physics. The course will cover mechanics (units), conversion factors (vector diagrams), translational equilibrium (uniformly accelerated motion), projectiles (Newton's Law), work energy and power (kinetics and potential energy), conservation of energy (impulse and momentum), heat (temperature scales), thermal properties of matter, heat and temperature change, heat and change of phase, and the physics of heat transfer (applications). Prerequisite: MA-114. (2-2-3)

MATHEMATICS & DATA SCIENCE COURSES: 13 CREDITS

MA-112 Intermediate Algebra (3 Credits)

Designed for students needing mathematical skills and concepts for MA-114 and MA-216. In this course, students are introduced to equations and inequalities and learn the language of algebra and related functions, including polynomial, rational, exponential and logarithmic functions. Other topics include solving equations, inequalities, and systems of linear equations; performing operations with real numbers, complex numbers, and functions; constructing and analyzing graphs of functions and using mathematical modeling to solve application problems. Prerequisite: MA-005 or placement test score.

MA-114 Algebra & Trigonometry (4 Credits)

Prerequisite: MA-112 or placement test score: Designed for students needing mathematical skills and concepts for MA-216; topics in this course are as follows. Algebra: basic operations on real and complex numbers, fractions, exponents, and radicals. Determinates. The solution of linear,

fractional, quadratic and system equations. Trigonometry: definition and identities, angular measurements, solving triangles, vectors, graphs, and logarithms. Prerequisite: MA-112 or acceptable based on the placement test score.

MA-128 Introduction to Statistics (3 Credits)

Probability: definitions, theorems, permutations and combinations. Binomial, hypergeometric, Poisson and normal distributions. Sampling distribution and central limit theorem, estimation and hypothesis testing. Prerequisite: MA-110, MA-111 or MA-112.

BUS-101 Introduction to Data Science (3 Credits)

Fundamental coursework on the standards and practices for collecting, organizing, managing, exploring, and using data. Topics include preparation, analysis, and visualization of data and creating analysis tools for larger data sets. Co-requisite: MA-112.

ENGLISH COMPOSITION AND COMMUNICATIONS COURSES: 6 CREDITS

EN-101 English Communications I (3 Credits)

This introductory college-level course focuses on effective oral and written communication skills and the development of analytical abilities through various reading and writing assignments. Students must demonstrate competence in writing mechanics, including grammar, sentence structure, logical content development, and research documentation through 2 essays and 2 research papers. Rhetorical modes may include description, comparison/contrast, narrative, and process analysis. Students are expected to develop effective oral communication skills through speeches. Group projects will develop effective team skills such as decision-making, time management, and cooperation. Prerequisites: acceptance based on placement test scores.

EN-102 English Communications II (3 Credits)

This sequel to EN-101 involves more sophisticated reading, writing, speaking, and research assignments. Students must demonstrate competence in writing mechanics, as well as advanced research skills, the ability to handle complex information, and effective team skills. Students write research papers: an information paper, a cause-and-effect paper, an argument paper, and a final research paper. The course includes group work. Presentations are required. Prerequisite: EN-101.

SOCIAL SCIENCES COURSES: 6 CREDITS

SS-171 Introduction to Psychology (3 Credits)

This course is a fundamental study of human behavior exploring such topics as learning and cognition, memory, intelligence, motivation and emotion, consciousness, personality, and abnormal behavior. A discussion of the scientific character of psychology and the research methodology employed in the discipline will be included. Prerequisite or Corequisite: EN-001 or EN-101.

SS-351 Ethics (3 Credits)

Prerequisite: EN-102: This course is designed to help students improve their ability to make ethical decisions. This is done by providing a framework that enables the student to identify, analyze, and resolve ethical issues that arise when making decisions. Case analysis is a primary tool for this course. Prerequisite: None.

ARTS AND HUMANITIES: 9 CREDITS

HU-220 Critical Thinking (3 Credits)

This course explores the process of thinking critically and guides students in thinking more clearly, insightfully and effectively. Concrete examples from personal experience and contemporary issues help students develop the abilities to solve problems, analyze arguments and issues, as well as make informed decisions in their academic career and personal lives. Readings, structured writing assignments and ongoing discussions help students develop sophisticated thinking abilities. Prerequisite: EN-102.

HU-225 Writing for the Internet (3 Credits)

This course introduces students to writing for the Internet allowing more effective online communication in such forums as blogs and websites. Students will learn how to write in a more active voice, bringing more energy and vibrancy to their articles and commentaries. Course material examines the workflow and demands of Internet writing and publishing. Students will learn how to launch their own blog and develop an audience as well learn how to prepare articles for other blogs and web sites. This course is designed for all students, regardless of their communication, writing, or journalism experience. This is not a Web design course. Prerequisite: EN-101.

HU-331 Arts and Ideas (3 Credits)

This course enables students to study and appreciate various forms of art, including painting, sculpture, architecture, music, drama, film, and literature through in-class and on-site experiences. The arts are also surveyed from a historical perspective, focusing primarily on eras in Western civilization. This enables students to sense the parallel development of the arts, of philosophy, and of sociopolitical systems and to recognize various ways of viewing reality. Prerequisite: EN-102.

5. Discuss how general education requirements will be met, if applicable.

The general education requirements will meet or exceed the specifications in The Code of Maryland Regulations (COMAR). Please see Section G.4 to review the general education requirements for the proposed degree.

6. Identify any specialized accreditation or graduate certification requirements for this program and its students.

The University is accredited regionally by the Middle States Commission in Higher Education (MSCHE) and through four specialized accrediting organizations: International Accreditation Council of Business Education (IACBE), Accreditation Board for Engineering and Technology (ABET), National Security Agency (NSA), and Department of Homeland Security (DHS). All five accrediting organizations have reviewed the University's distance education program as part of their accreditation process. Capitol Technology University is fully accredited by MSCHE, IACBE, ABET, NSA, and DHS. The University is in good standing with all its accrediting bodies. This program is designed to meet the requirements of the MSCHE.

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

The University will not be contracting with another institution or non-collegiate organization.

- 8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The **B.S. in Professional Trades Administration** program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, Learning Management System, availability of academic support services and financial aid resources, and costs and payment policies.

Curriculum, course, and degree information will be available on the university website and via e-mail as well as regular mail (by request). The expectations for faculty/student interaction are available to students during virtual open house events, literature, website, etc. This information is also part of the material distributed for each course. Students receive guidance on proper behavior/interaction with their Department Chair and faculty members both in-person and online to facilitate a high-level experience. Technology competence and skills and technical equipment requirements are part of the material distributed for each course. The technical equipment requirements are also listed on our website and provided to students in the welcome package.

The University's academic support services, financial aid resources, costs and payment policies, and Learning Management System are covered in the University Open Houses, the application process, the Welcome Aboard process, Orientation, Student Town Halls, and individual counseling.

- 9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.**

The **B.S. in Professional Trades Administration** program's advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available. The content for every new program is derived from the new program request sent to the Maryland Higher Education Commission is the source of the content for every new program at the University.

H. Adequacy of Articulation:

- 1. If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements.**

This program does not currently have articulation partners. However, the articulation process will work as it does for the University's current degrees. The University is very active with its transfer partners throughout the state and beyond. The goal of the University is to work with partners to make the transfer as seamless as possible and to maximize the student's transfer credits as possible. There are University transfer admissions personnel to guide the student

through the process.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11):

- 1. Provide a brief narrative demonstrating the quality of the program faculty. Include a summary list of the faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, or adjunct) and the course(s) each faculty member will teach.**

Almost all of the core curriculum faculty listed below have been engaged with the University for several years or more. Dr. Ashmall, Dr. Bajracharya, Dr. Bajwa, Dr. Baker, Prof. Burke, Dr. Butler, Dr. Ian McAndrew, and Dr. Steele are full-time faculty members. Sixteen of the eighteen faculty members hold terminal degrees. Prof. Burke and Prof. Weideman are professionally qualified given their significant years of experience and positions held in skilled professional trades. The University leadership is confident in the quality of the faculty and their abilities to provide a learning environment supportive of the University's goals for student success.

Instructors who will be engaged with the **B.S. in Professional Trades Administration** core curriculum are:

Dr. Nayef Abu-Ageel Full time	Ph.D. Electrical and Computer Engineering M.S. Electrical Engineering B.S. Electrical Engineering	Technical Electives
Dr. Alex "Sandy" Antunes Full time	Ph.D. Computational Astrophysics M.S. Astronomy B.S. Astronomy and Physics	Technical Electives
Dr. & Lt. Col. Soren Ashmall, USMC (Ret.) Full time	Ph.D. Technology M.A. Broadcast Journalism B.A. Theatre MOS 3450 Planning, Programming, & Budget Systems Officer MOS 8055 Information Management Officer MOS 0202 Intelligence Officer MOS 2602 Signals Intelligence Officer/Ground Electronic Warfare Officer Licensed Real Estate Agent/REALTOR Facilities Security Officer, National Industrial Security Program (NISP)	BUS-101 EN-101 EN-102 All UH and SS courses
Dr. Chandra Bajracharya Full time	Ph.D. Electrical and Computer Engineering M.S. Applied Computing M.S. Electrical Power Engineering B.E. Electrical Engineering	Technical Electives
Dr. Garima Bajwa Full time	Ph.D. Computer Science and Engineering M.S. Electrical and Computer Engineering B.S. Electronics and Communications Engineering	Technical Electives

Dr. Richard Baker Full time	Ph.D. Information Systems M.S. Computer Science B.S. Mathematics	Technical Electives
Dr. Hasna Banu Adjunct	Ph.D. Theoretical Physics M.S. Mathematics B.S. Mathematics	All Math and PH courses
Prof. Gary Burke Full time	M.B.A. B.S. Building Science Authorized OSHA Outreach Trainer: Construction Licensed General Contractor (North Carolina)	All PTA courses
Dr. William Butler Full time	D.Sc. Cyber Security M.S. Strategic Studies B.S. Computer Science NSTISSI No. 4011 CNSSI No. 4012 NSTISSI No. 4015 CNSSI No. 4016	Technical Electives
Dr. Craig Capano Adjunct	Ph.D. Civil Engineering with Concentration in Construction Engineering and Management and a focus on Business M.C.S.M. (Master of Construction Science and Management) B.S. Construction Management A.S. Architectural Engineering	All PTA courses
Dr. Jami Carroll Adjunct	D.Sc. Cybersecurity M.S. Cybersecurity M.B.A.	Technical Electives
Dr. Priscilla Lewis Adjunct	D.M. Leadership M.B.A. M.P.S. Managerial Policy B.S. Economics/Mathematics	PTA-279
Dr. Linda Martin Full time	Ph.D. Safety Sciences M.S. Occupational Safety and Health Management M.B.A General Management B.S. Geology Certified Industrial Hygienist: CP-10409 Certified Safety Professional: CSP-21861 Associate Safety Professional: ASP-A15411 Safety Management Specialist: SMS-2 Occupational Health and Safety Technologist: OHST-4264 Construction Health and Safety Technician: CHST-C3978 Safety Trained Supervisor – Construction: IEX11851	All PTA courses

	Certified Environmental Safety & Health Trainer: CET-13003 Certified Hazardous Materials Manager: CHMM-17198 Construction Risk and Insurance Specialist (CRIS) Authorized OSHA Outreach Trainer: General Industry Authorized OSHA Outreach Trainer: Construction	
Dr. Ian McAndrew Full time	Ph.D. Mechanical Engineering M.Sc. Manufacturing Engineering M.A. Education Management Post-Graduate Diploma in Education B.Sc. (Hons) Mechanical Engineering B.A. Production Engineering Fellow of the Royal Aeronautical Society Technical Qualifications (Associate Degrees) Higher National Certificate, HNC, in Mechanical Engineering Higher National Diploma, HND, in Production Engineering System Safety in Occupational Hygiene and Safety – HAS Courses City and Guilds 200, 205 II & III (all distinctions – highest grade ever achieved in Ford's Training Scheme) Apprentice Toolmaker 1977 – 1981 (Distinction)	All PTA courses
Dr. Alexander Perry Adjunct	D.Sc. Cybersecurity M.S. Computational Mathematics	All Math and Technical Electives
Dr. Bradford Sims Full time	Ph.D. Curriculum Instruction Design M.S. Building Construction Management B.S. Building Construction Technology	All PTA courses
Dr. Robert Steele Full time	Ph.D. Computer Science B.S. Math and Computer Science	Technical Electives
Prof. Nathan Weideman Adjunct	M.S. Astronautical Engineering B.S. Professional Aeronautics	PH 201 and Technical Electives

Additional qualifications of leading experts:

1. Prof. Gary Burke has forty years of experience as a skilled trade professional working in the construction industry, teaching construction courses, and construction safety courses. He is a certified OSHA authorized construction safety trainer and managed his own residential construction company as a licensed general contractor for fourteen years. He is an undergraduate department chair and professor at Capitol Technology University.

2. Prof. Nathan Weideman

Prof. Weideman is professionally qualified given his significant years of experience and positions held in the aviation industry. He has served as an Aerospace Maintenance Duty Officer for the U.S. Navy for over the past 5 years. He also works with the Defense Threat Reduction Agency (DTRA) and U.S. Special Operations Command (USSOCOM) on aerospace issues for Counter Weapons of Mass Destruction (CWMD) efforts. His previous positions include directing Navy Reserve Aircraft Maintenance Modification and Overhaul for a C-130 squadron, Senior Technical Writer for Aviation, and Naval Analyst for Naval Aviation matters.

2. **Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidence-based best practices, including training in:**

a) Pedagogy that meets the needs of the students

The primary pedagogy for faculty at Capitol Technology University is the Active Learning model. The university believes strongly in a highly-interactive, thinking, and hands-on experience for students in each class to the maximum extent possible.

It was two Missouri State professors, historian Charles Bonwell and psychologist James Eison, who coined the term "active learning." In their 1991 book on the subject, *Active Learning: Creating Excitement in the Classroom*, they offered this definition of the concept: "active learning involves students in doing things and thinking about the things they are doing."

The definition, though it seems circuitous, marks a definitive pedagogical shift in college teaching and learning. Rather than think about what they are watching, hearing, or reading, students are first encouraged to be "doing" something in class, and then to apply critical thought and reflection to their own classroom work and activity. Their argument was backed up by research. Even Bligh, 20 years earlier, had pointed out that the immediate rehearsal of new information and knowledge had a significant impact on learning.

This approach is as helpful in the sciences as it is in the arts or humanities: whether it's organic chemistry, creative writing, or behavioral economics, concepts are all best understood through repeated practice and open, social exploration. The central tenet of active learning is that practice matters, and that classroom time is better spent giving students opportunities to work with concepts over and over, in a variety of ways and with opportunities.

The central tenet of active learning — that practice and interaction matters— can be applied across disciplines for immediate feedback, so that knowledge can take hold in their own minds.

(Source: Preville, P. *Active Learning: The Perfect Pedagogy for the Digital Classroom: An Essential Guide for the Modern Professor*)

All faculty receive regular periodic and recurring pedagogical training during the academic year. Those training sessions occur in a hybrid format – simultaneously live online and live on-ground in the classroom. The sessions are designed to reach all faculty, both fulltime and adjunct, in

order to ensure everyone receives the training. Additionally, the sessions are recorded for those faculty who are unable to attend the live training session due to other professional and teaching commitments.

b) The Learning Management System

The University's Department of Online Learning and Information Technology Division supports the online program needs of faculty and students. The Department of Online Learning and IT Help Desk provide 24-hour support to the faculty. Canvas is the University's online Learning Management System. When a new faculty member is assigned to teach an online course, the Department of Online Learning provides formal training for the instructor. New faculty are assigned an experienced faculty mentor to ensure a smooth transition to the online environment as well as to ensure compliance with the institution's online teaching pedagogy. The University believes this provides the highest-level learning experience for the faculty member and, in turn, students attending online classes.

c) Evidenced-based best practices for distance education, if distance education is offered.

Faculty at Capitol Technology University receive training in Keller's ARCS Motivational Model and his associated strategies for distance education/online learning.

A model used in the online delivery of teaching and learning to increase learner motivation is Keller's ARCS motivational model. This model has been considered an important element in online education because of its implications on increased learner motivation and learning outcomes. The Keller's model consists of motivating students by maintaining and eliciting attention (A), such as virtual clinical simulations; making the content and format relevant (R), by modeling enthusiasm or relating content to future use; facilitating student confidence (C), by providing "just the right challenge"; and promoting learner satisfaction (S), by providing reinforcement and praise when appropriate. Examples of Keller's model include increasing motivation including the arousal of curiosity of students, making the connection between learning objectives and future learning goals, autonomous thinking and learning, and fostering student satisfaction. Keller's ARCS model has been researched by various educational online programs to analyze student motivation and learning outcomes. Keller's model serves as an example and guide for instructors to motivate and increase online engagement with their students as well as research purposes.

A qualitative study by Chan Lin investigated online student learning and motivation. Discussion boards, student projects, and reflection data were collected and analyzed from a 12-week web-based course. Respondents indicated the importance of online feedback from the instructor and peer modeling of course tasks to visualize learning progress. The study revealed using Keller's ARCS strategies fosters greater student online engagement by fostering self-efficacy and a sense of accomplishment.

In a mixed-method study, assessing the use of Keller's ARCS on instructional design, the use of educational scaffolding fostered positive levels of student motivation. Relevancy, attention, confidence, and satisfaction were all common factors associated with student success in the course and course completion.

(Source: Pinchevsky-Font T, Dunbar S. Best Practices for Online Teaching and Learning in Health Care Related Programs. The Internet Journal of Allied Health Sciences and Practice. January 2015. Volume 13 Number 1.)

All faculty receive regular periodic and recurring training on evidence-based practices for distance education/online learning during the academic year. Those training sessions occur in multiple formats: asynchronous, synchronous (i.e., live online), hybrid (i.e., simultaneously live online and live on-ground), and on-ground in the classroom. The sessions are designed to reach all faculty, both fulltime and adjunct, to ensure all members receive the training. Additionally, the live sessions are recorded for those faculty who are unable to attend the live training session due to other professional commitments or who are teaching classes at the training delivery time.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12):

- 1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program. If the program is to be implemented within existing institutional resources, include a supportive statement by the President for library resources to meet the program's needs.**

Library Services: The Puente Library offers extensive services and a wide collection for Capitol Technology University students to be academically successful. Library resources are available digitally. The library also provides a mailing service for materials borrowed through the Maryland system.

The library is currently supporting the following degrees at the undergraduate level: B.S. in Astronautical Engineering, B.S. in Aviation Professional Pilot, B.S. in Computer Engineering, B.S. in Computer Engineering Technology, B.S. in Computer Science, B.S. in Construction Information Technology and Cybersecurity, B.S. in Construction Management and Critical Infrastructure, B.S. in Construction Safety, B.S. in Counterterrorism, B.S. in Cyber Analytics, B.S. in Cybersecurity, B.S. in Data Science, B.S. in Electrical Engineering, B.S. in Electrical Engineering Technology, B.S. in Engineering Technology, B.S. in Facilities Management and Critical Infrastructure, B.S. in Information Technology, B.S. in Management of Cyber and Information Technology, B.S. in Mechatronics Engineering, B.S. in Mechatronics and Robotics Engineering Technology, B.S. in Software Engineering, and B.S. in Technology and Business Management, B.S. in Unmanned and Autonomous Systems, and B.S. in Web Development.

The library is currently supporting the following degrees at the graduate level: Master of Business Administration (M.B.A.), Master of Science (M.S.) in Astronautical Engineering, M.S. in Aviation, M.S. in Aviation Cybersecurity, M.S. in Computer Science, M.S. in Construction Cybersecurity, M.S. in Construction Safety, M.S. in Critical Infrastructure, M.S. in Cyber Analytics, M.S. in Cybersecurity, M.S. in Information Systems Management, M.S. in Engineering Technology, M.S. in Internet Engineering, M.S. in Unmanned and Autonomous Systems Policy and Risk Management, Technical Master of Business Administration (T.M.B.A.) in Business Analytics and Data Science, and T.M.B.A. in Cybersecurity, Doctor of Science (D.Sc.) in Cybersecurity, Doctor of Philosophy (Ph.D.) in Artificial Intelligence, Ph.D. in Aviation, Ph.D. in Business Analytics and Data Sciences, Ph.D. in Construction Science, Ph.D. in Critical Infrastructure, Ph.D. in Emergency and Protective Services, Ph.D. in Human Factors, Ph.D. in Manufacturing, Ph.D. in Occupational Health and Safety, Ph.D. in Product Management,

Ph.D. in Quantum Computing, Ph.D. in Technology, Ph.D. in Technology/M.S. Research Methods Combination Program, Ph.D. in Unmanned Systems Applications.

Therefore, the library is fully prepared to support a **B.S. in Professional Trades Administration**.

Services provided to online students include:

- "Ask the Librarian"
- Research Guides
- Tutorials
- Videos
- Online borrowing

The John G. and Beverley A. Puente Library provides access to management, decision science, and research methods materials through its 10,000-title book collection, e-books, and its 90 journal subscriptions. The library will continue to purchase new and additional materials in the management, decision science, and research methods area to maintain a strong and current collection in the subject area. Students can also access materials through the library's participation in Maryland's Digital eLibrary Consortium. This online electronic service provides access to numerous databases (Access Science, NetLibrary) that supply students with the documents they need. Available databases include ProQuest, EBSCO, ACM, Lexis Nexis, Taylor Francis, and Sage Publications.

The Puente Library can provide access to historical management and decision science materials through its membership in the Maryland Independent College and University Association (MICUA) and the American Society of Engineering Education (ASEE). Reciprocal loan agreements with fellow members of these organizations provide the library access to numerous research facilities that house and maintain archives of management and decision science documents. The proximity of the University of Maryland, College Park, and other local area research and academic libraries provide the Puente Library with quick access to these materials as well.

The library currently supports the needs of students at the undergraduate, masters, and doctoral levels.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in COMAR 13B.02.03.13):

- 1. Provide an assurance that the physical facilities, infrastructure, and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences. If the program is to be implemented within existing institutional resources, include a supportive statement by the President regarding adequate equipment and facilities to meet the program's needs.**

No new facilities are required for the program. The on-ground traditional classrooms are adequately equipped. The online class platform is web-based and requires no additional equipment for the institution. The current Learning Management System, Canvas, and Zoom meet the needs of the degree program. The Business and Technology lab, Computer Science Lab,

Cyber Lab, Robotics Lab, and Unmanned Systems Lab meet the potential research needs of the students. The labs provide both local and virtual support.

2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:

a. An institutional electronic mailing system

Capitol Technology University provides an institutional electronic mailing system to all students and faculty. The University requires the use of the email system by all students and faculty in all the institution's modalities of course delivery. Capitol Technology University students and faculty are required to use the institution's email addresses (e.g., xxxxxxxx@captechu.edu) in all University matters and communications. The University uses the email capabilities in Microsoft Office 365 and Microsoft Outlook.

b. A Learning Management System that provides the necessary technological support for distance education

Capitol Technology University provides a robust Learning Management Systems (LMS) through the use of the Canvas LMS by Instructure (www.canvaslms.com). The University pairs Canvas with Zoom (zoom.us) to provide a platform for every student and faculty member to meet face-to-face in a synchronous "live" mode of communication. The University requires Canvas for every class; as a result, every course has a classroom on Canvas and Zoom. All syllabi, grades, and assignments must be entered into Canvas on a timely basis throughout the semester.

Canvas provides the world's most robust LMS. It is a 21st Century LMS; Canvas is a native cloud, Amazon Web Service hosted system. The system is adaptable, reliable, and customizable. Canvas is easy to use for students and faculty. The system is fully mobile and has proven to be timesaving when compared to other systems. The following list provides the features of the system:

Time and Effort Savings

- **CANVAS DATA**
Canvas Data parses and aggregates more than 280 million rows of Canvas usage data generated daily.
- **CANVAS COMMONS**
Canvas Commons makes sharing a whole lot easier.
- **SPEEDGRADER ANNOTATIONS**
Preview student submissions and provide feedback all in one frame.
- **GRAPHIC ANALYTICS REPORTING ENGINE**
Canvas Analytics helps you turn rich learner data into meaningful insights to improve teaching and learning.
- **INTEGRATED MEDIA RECORDER**
Record audio and video messages within Canvas.

- **OUTCOMES**
Connect each learning outcome to a specific goal, so results are demonstrated in clearly measurable ways.
- **MOBILE ANNOTATION**
Open, annotate, and submit assignments directly within the Canvas mobile app.
- **AUTOMATED TASKS**
Course management is fast and easy with automated tasks.
- **NOTIFICATION PREFERENCES**
Receive course updates when and where you want - by email, text message, even Twitter or LinkedIn.
- **EASE OF USE**
A familiar, intuitive interface means most users already have the skills they need to navigate, learn, and use Canvas.
- **IOS AND ANDROID**
Engage students in learning anytime, anywhere from any computer or mobile device with a Web-standard browser.
- **USER-CUSTOMIZABLE NAVIGATION**
Canvas intelligently adds course navigation links as teachers create courses.
- **RSS SUPPORT**
Pull feeds from external sites into courses and push out secure feeds for all course activities.
- **DOWNLOAD AND UPLOAD FILES**
Work in Canvas or work offline—it's up to you.
- **SPEEDGRADER**
Grade assignments in half the time.

Student Engagement

- **ROBUST COURSE NOTIFICATIONS**
Receive course updates when and where you want—by email, text message, and even Facebook.
- **PROFILE**
Introduce yourself to classmates with a Canvas profile.
- **AUDIO AND VIDEO MESSAGES**
Give better feedback and help students feel more connected with audio and video messages.
- **MULTIMEDIA INTEGRATIONS**
Insert audio, video, text, images, and more at every learning contact point.
- **EMPOWER GROUPS WITH COLLABORATIVE WORKSPACES**
By using the right technologies in the right ways, Canvas makes working together easier than ever.

- **MOBILE**
Engage students in learning anytime, anywhere from iOS or Android, or any mobile device with a Web-standard browser.
- **TURN STUDENTS INTO CREATORS**
Students can create and share audio, video, and more within assignments, discussions, and collaborative workspaces.
- **WEB CONFERENCING**
Engage in synchronous online communication.
- **OPEN API**
With its open API, Canvas easily integrates with your IT ecosystem.
- **BROWSER SUPPORT**
Connect to Canvas from any Web-standard browser.
- **LTI INTEGRATIONS**
Use the tools you want with LTI integrations.
- **MODERN WEB STANDARDS**
Canvas is built using the same Web technologies that power sites like Google, Facebook, and Twitter.

Lossless Learning

- **CANVAS POLLS**
Gauge comprehension and incorporate formative assessment without the need for "clicker" devices.
- **MAGICMARKER**
Track in real-time how students are performing and demonstrating their learning.
- **QUIZ STATS**
Analyze and improve individual assessments and quiz questions.
- **LEARNING MASTERY FOR STUDENTS**
Empower students to take control of their learning.

(Source: <https://www.canvaslms.com/higher-education/features>)

Capitol Technology University has been using Canvas for over five years. Canvas has proven to be a wholly reliable LMS system that provides the necessary technological support for distance education/online learning.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14):

1. Table 1: Resources.

TABLE 1: RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition/Fee Revenue (c + g below)	\$350,060	\$707,940	\$1,065,072	\$1,449,072	\$1,851,644
a. Number of F/T Students	8	16	24	32	40
b. Annual tuition/Fee rate	\$27,808	\$28,503	\$29,216	\$29,946	\$30,695
c. Total F/T Revenue (a x b)	\$222,464	\$465,048	\$701,184	\$958,272	\$1,227,800
d. Number of P/T Students	7	13	19	25	31
e. Credit Hour Rate	\$1,519	\$1,557	\$1,596	\$1,636	\$1,677
f. Annual Credit Hour	12	12	12	12	12
g. Total P/T Revenue (d x e x f)	\$127,596	\$242,892	\$363,888	\$490,800	\$623,844
3. Grants, Contracts and Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	\$350,060	\$707,940	\$1,065,072	\$1,449,072	\$1,851,644

A. Provide a narrative rationale for each of the resource categories. If resources have been or will be reallocated to support the proposed program, briefly discuss those funds.

1. Reallocated Funds

The University will not need to reallocate funds for the program.

2. Tuition and Fee Revenue

Tuition is calculated to include an annual 2.5% tuition increase. A 20% attrition rate has been calculated.

3. Grants and Contracts

There are currently no grants or contracts.

4. Other Sources

There are currently no other sources of funds.

5. Total Year

No additional explanation or comments needed.

2. Table 2: Program Expenditures.

TABLE 2: EXPENDITURES

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$113,468	\$155,071	\$238,421	\$325,843	\$417,486
a. #FTE	1.5	2	3	4	5
b. Total Salary	\$94,557	\$129,226	\$198,684	\$271,536	\$347,905
c. Total Benefits (20% of salaries)	\$18,911	\$25,845	\$39,737	\$54,307	\$69,581
2. Admin Staff (b + c below)	\$5,942	\$6,091	\$6,244	\$6,400	\$6,559
a. #FTE	.08	.08	.08	.08	.08
b. Total Salary	\$4,952	\$5,076	\$5,203	\$5,333	\$5,466
c. Total Benefits	\$990	\$1,015	\$1,041	\$1,067	\$1,093
3. Support Staff (b + c below)	\$59,885	\$92,076	\$125,837	\$161,230	\$198,313
a. #FTE	1.00	1.5	2	2.5	3
b. Total Salary	\$49,905	\$76,730	\$104,864	\$134,358	\$165,261
c. Total Benefits	\$9,980	\$15,346	\$20,973	\$26,872	\$33,052
4. Technical Support and Equipment	\$1,050	\$2,175	\$3,440	\$4,845	\$6,390
5. Library	\$0	\$0	\$0	\$0	\$0
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses	\$5,850	\$14,210	\$25,370	\$39,330	\$56,090
TOTAL (ADD 1-7)	\$186,195	\$269,623	\$399,312	\$537,648	\$684,838

A. Provide a narrative rationale for each expenditure category. If expenditures have been or will be reallocated to support the proposed program, briefly discuss those funds.

a. Faculty

Table 2 reflects the faculty hours in total, but this does not necessarily imply that these are new hire requirements.

b. Administrative Staff

Capitol Technology University will continue with current the administrative staff through the proposed time period.

c. Support Staff

Capitol Technology University will add additional support staff to facilitate the program.

d. Equipment

Software for courses is available free to students or is freeware. Additional licenses for the LMS will be purchased by the University at the rate of \$70 per student in Year 1. The rate is estimated to increase by \$5 per year.

e. Library

Money has been allocated for additional materials to be added to the on-campus and virtual libraries to ensure the literature remains current and relevant. However, it has been determined that the current material serves the needs of this degree due to the extensive online database.

f. New or Renovated Space

No new or renovated space is required.

g. Other Expenses

Funds have been allocated for office materials, travel, professional development, course development, marketing, and additional scholarships.

h. Total Year

No additional explanation or comments needed.

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15):

1. Discuss procedures for evaluating courses, faculty and student learning outcomes.

The assessment process at the University consists of a series of events throughout the Academic Year. The results of each event are gathered by the University Assessment Team and stored in Canvas for analysis and use in annual reports, assessments, etc. The University Assessment Team analyzes the results, develops any necessary action plans, and monitors the implementation of the action plans.

Academic Year Assessment Events:

Fall Semester:

- At the August Faculty Retreat, the faculty reviews any outstanding student learning challenges that have not been adequately addressed. The issues are brought to the Academic Deans for review and development of implementation plans.
- Faculty submit performance plans consistent with the mission and goals of the University and department. The documents are reviewed and approved by the Academic Deans.
- Department Chairs and Academic Deans review the Graduating Student Survey data.
- Department Chairs and Academic Deans review student internship evaluations.
- Department Chairs and Academic Deans review grade distribution reports from the spring and summer semesters.
- Department Chairs and Academic Deans review student course evaluations from the Summer Semester.
- Departments conduct Industrial Advisory Board meetings to review academic curriculum recommendations. The Advisory Board meets to begin curriculum review or address special

issues that may arise related to the curriculum. Based on an analysis and evaluation of the results, the Academic Deans, faculty, and the advisory boards will develop the most effective strategy to move the changes forward.

- NOTE: A complete curriculum review for degrees occurs every two years. In most cases, the changes only require that the Academic Deans inform the Vice President of Academic Affairs and University President and provide a report that includes a justification and the impact of the changes as well as a strategic plan. Significant changes typically require the approval of the Executive Council.
- The Academic Deans attend the Student Town Hall and review student feedback with Department Chairs.
- Department Chairs conduct interviews with potential employers at our Career Fair.
- Post-residency, the Academic Deans meet with the faculty to review the student learning progress and discuss needed changes.

Spring Semester:

- Faculty Performance Plans are reviewed with faculty to identify issues of divergence and to adjust the plan as needed.
- Department Chairs and Academic Deans review grade distribution reports from the Fall Semester.
- Department Chairs and Academic Deans review the Graduating Student Survey data.
- Department Chairs and Academic Deans review student course evaluations from the Fall Semester and the Spring Semester (in May before the Summer Semester begins).
- Department Chairs and Academic Deans meet to review the content of the graduating student, alumni, and course surveys to ensure the surveys continue to meet the university's assessment needs.
- At the Annual Faculty Summit in May, the faculty review and discuss student learning challenges from the past academic year and provide recommendations to the Academic Deans. The results also lead to implementation plans for improvement.
- Department Chairs conduct interviews with potential employers at our Career Fair.
- Departments conduct Industrial Advisory Board meetings to review academic curriculum recommendations.

In addition to these summative assessments, the Academic Deans meet with the Department Chairs every week to review current student progress. This formative assessment allows for immediate minor changes, which increase faculty effectiveness and, ultimately, student outcomes.

The Faculty Senate meets monthly from August through April. The Faculty Senate addresses issues that impact student outcomes as those issues emerge. The leadership of the Faculty Senate then provides a report on the matter to the Academic Deans. The report may include a recommendation or a request to move forward with a committee to examine the issue further. In most cases, the changes only require the Academic Deans to inform the Vice President of Academic Affairs and University President and provide a report that includes a justification and the impact of changes as well as a strategic plan. Significant changes typically require the approval of the Executive Council.

2. **Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty**

satisfaction, and cost-effectiveness.

Student Learning Outcomes:

Student learning outcomes for the degree will be measured per Sections G and M. The program will also use the rubrics and assessment measures (e.g., competency exams/projects, case study exams, etc.) that conform to the University's regional accreditor (i.e., MSCHE) and its program-specific accrediting organizations (i.e., IACBE, ABET, NSA, DHS). This degree meets the requirements of MSCHE. The University is in good standing with all its accrediting bodies.

Student Retention:

The University maintains a comprehensive student retention program under the Vice President for Student Engagement. The program assesses student retention at all levels, including the individual course, major, and degree. During the semester and term, the University's Drop-Out Detective capability, within its Learning Management System (i.e., Canvas), provides an early alert at the course level to potential issues related to retention. Within the Office of Student Life, Academic Advisors monitor Drop-Out Detective and contact students who appear to have problems with their academic performance. The Academic Advisors work with each student to create a plan to remove any barriers to success. The Academic Advisors also work with the course instructors as needed to gain additional insight that may help correct the situation.

Each student also meets with their Academic Advisor each semester to evaluate their progress toward degree completion. An updated plan of action is developed for each student for their next semester's registration and each following semester through degree completion.

The Vice President for Student Engagement also meets regularly with the Vice President of Academic Affairs and Academic Deans to review student retention within each degree program and address any issues that appear to be impediments to degree completion.

Student and Faculty Satisfaction:

Evaluations and assessment of Student and Faculty satisfaction occur every semester. Faculty members are evaluated every semester by students enrolled in their courses. Students are required to complete a course evaluation online within a specified time frame at the end of the semester for every enrolled course, or they are locked out of Canvas (the University's Learning Management System) until they complete each survey. Every faculty member is also required to review each of their courses after each semester; the goal is to ensure up-to-date content, effective and efficient methods of delivery, and appropriate outcomes.

The Department Chairs and Academic Deans review the student evaluations for every course offered at the University. The Department Chairs and Academic Deans also review faculty satisfaction every semester. If changes are needed at the course level, the changes are developed and implemented by the faculty upon approval of the Department Chairs and Academic Deans. If changes are required at the faculty level, the Department Chairs will make the changes. At the end of the following semester, appropriate stakeholders analyze the results of a follow-on evaluation for the effectiveness of the changes. This cycle is an ongoing process.

Cost Effectiveness:

Based on the year-long inputs, evaluations, and reviews described in Section M.1, the Department Chairs and Academic Deans prepare the proposed academic budget for each program for the upcoming year. Budget increases are tied to increasing student learning and performance as well as critical strategic initiatives.

The Interim Vice President of Finance and Administration also monitors each academic program throughout every semester and term for its cost-effectiveness. Additionally, the revenue and costs of every University program are reviewed annually by the Executive Council and Board of Trustees before approving the next year's budget.

N. Consistency with the State's Minority Student Achievement goals (as outlined in COMAR 13B.02.03.05 and the State Plan for Post-Secondary Education):

- 1. Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.**

Capitol Technology University is a majority-minority school. Our programs attract a diverse set of students who are multiethnic and multicultural. The University actively recruits minority populations for all undergraduate and graduate-level degrees. Special attention is also provided to recruit females into the STEM and multidisciplinary programs at all degree levels – undergraduate, master's, and doctoral. The University will use the same approach for the **B.S. in Professional Trades Administration**.

O. Relationship to Low Productivity Programs Identified by the Commission:

- 1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration, library resources, and general operating expenses) may be redistributed to this program.**

This program is not associated with a low productivity program identified by the Commission.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

- 1. Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.**

Capitol Technology University is fully eligible to provide distance education. The University has a long history of providing high-quality distance education. The University is accredited regionally by the Middle States Commission in Higher Education (MSCHE) and through four specialized accrediting organizations: International Accreditation Council of Business Education (IACBE), Accreditation Board for Engineering and Technology (ABET), NSA, and DHS. All five accrediting organizations have reviewed the University's distance education program as part of their accreditation process. Capitol Technology University is fully accredited by MSCHE, IACBE, ABET, NSA, and DHS. The University is in good standing with all its accrediting bodies.

- 2. Provide assurance and any appropriate evidence that the institution complies with the C-RAC guidelines, particularly as it relates to the proposed program.**

Capitol Technology University has a long history of providing high-quality distance education/online learning that complies with the Council of Regional Accrediting Commissions (C-RAC) Interregional Guidelines for the Evaluation of Distance Education. The University will also continue to abide by the C-RAC guidelines with the proposed **B.S. in Professional Trades Administration**.

a. Council of Regional Accrediting Commissions (C-RAC) Interregional Guidelines for the Evaluation of Distance Education.

1. Online learning is appropriate to the institution's mission and purposes.

Online learning is consistent with the institution's mission, purpose, and history. Please refer to Section A of this proposal.

2. The institution's plans for developing, sustaining, and, if appropriate, expanding online learning offerings are integrated into its regular planning and evaluation processes.

All programs at the University – online, hybrid, and on-ground – are subject to the same regular planning, assessment, and evaluation processes. Please see Section M of this proposal for the detailed process.

3. Online learning is incorporated into the institution's systems of governance and academic oversight.

All programs at the University – online, hybrid, and on-ground – are subject to the same regular planning, assessment, and evaluation processes. Please see Section M of this proposal for the detailed process.

4. Curricula for the institution's online learning offerings are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.

Online programs/courses meet the same accreditation standards, goals, objectives, and outcomes as traditional instruction at the University. The online course development process incorporated the Quality Matters research-based set of standards for quality online course design to ensure academic rigor of the online course is comparable to the traditionally offered course. The University Academic Deans, chairs, and faculty review curriculum annually. Courses are reviewed at the end of each term of course delivery. This process applies to online and traditional classes. In addition, advisory boards are engaged in the monitoring of course quality to ensure quality standards are met regardless of the delivery platform.

5. The institution evaluates the effectiveness of its online learning offerings, including the extent to which the online learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals.

Online programs/courses meet the same accreditation standards, goals, objectives, and outcomes as traditional classroom delivery. The University selects the learning platforms to ensure the high standards of the technical elements of each course. The Academic

Deans monitor any course conversion from in-class to online to ensure the online course is academically equivalent to the traditionally offered course and that the technology is appropriate to support the expected rigor and breadth of the course.

- 6. Faculty responsible for delivering the online learning curricula and evaluating the students' success in achieving the online learning goals are appropriately qualified and effectively supported.**

The Department of Professional Trades, where this degree will be sponsored, is staffed by a qualified Undergraduate Department Chair, Prof. Gary Burke. He is supported by the faculty identified in Section I as well as the rest of the University's faculty, administration, and senior leadership. Other appropriately credentialed faculty will be added as needed as part of the delivery process.

The evaluation of the courses in the program will be done using the same processes as all other programs at the University. (Please see Section M.) All Capitol Technology University faculty teach in the traditional classroom environment and online. (Please see faculty qualifications in Section I of this document.)

- 7. The institution provides effective student and academic services to support students enrolled in online learning offerings.**

Students can receive assistance in using online learning technology via several avenues. Student aides are available to meet with students and provide tutoring support in both subject matter and use of the technology. Tutors are available in live real-time sessions using Zoom or other agreed-upon tools. Pre-recorded online tutorials are also available.

In addition to faculty support, on-ground and online tutoring services are available to students in a one-on-one environment.

Laboratories (on ground and virtual) are available for use by all students. Faculty and highly-qualified tutors staff the laboratories and provide academic support.

Library services and resources are appropriate and adequate. Please refer to Section J of this document and the attached letter from the University President. The library adequately supports the students learning needs.

- 8. The institution provides sufficient resources to support and, if appropriate, expand its online learning offerings.**

The University has made the financial commitment to the program (please refer to Section L). The University has a proven record of accomplishment in supporting degree completion.

- 9. The institution assures the integrity of its online offerings.**

Current faculty serve on internal advisory boards that examine possible for program changes, including course and program development. All faculty are selected on domain expertise and program-related teaching experience.

When new faculty or outside consultants are necessary for the design of courses offered, the University's Human Resource Department initiates a rigorous search and screening process to identify appropriate faculty to design and teach online courses. Again, all faculty are selected on domain expertise and program-related teaching experience

The University online platforms offer several avenues to support instructors engaged in online learning. The Director of Online Learning Division is highly skilled and trained in faculty development. Several seminars and online tutorials are available to the faculty every year. Mentors are assigned to new faculty. Best practice sharing is facilitated through the Academic Deans, Department Chairs, and formal meetings.

The assessment for online learning classes/students is the same as for all academic programs at the University. Faculty provide required data on student achievement. The Learning Management System includes data on student achievement. Proof of these assessments is available during the class and following class completion to the Academic Deans and Department Chairs. On an annual basis, the information is reported to the University's accreditation authorities such as MSCHE and NSA/DHS.